

September 2015 Climate Review for Puerto Rico and the U.S. Virgin Islands

...Based on data received until Oct 10th ...

SAN JUAN



SYNOPSIS

A fair and stable weather pattern prevailed across the local islands most of September with mostly clear/sunny skies and a few locally induced showers and Tstorms. Wetting rains associated with a [tropical wave the 12th](#), [TUTT low across the Northeast Caribbean the 1st](#), as well as another [TUTT low the 19-20th](#) were beneficial, but unfortunately long term rainfall deficits still prevail across much of Puerto Rico and the U.S. Virgin Islands.

Based on COOP data, an average rainfall total of 0.57 and 2.76 inches was observed across Saint Thomas/Saint John and Saint Croix, respectively. This is only 11 and 56% of their normal rainfall. September 2015 is the 7th month in a row with rainfall accumulations below normal across the local islands. An average rainfall total of 5.34 inches was observed across Puerto Rico, which is 2.78 inches below normal. The highest maximum temperature recorded this month was 98°F at Central Aguirre on 9/12 , and the lowest minimum temperature was 63°F at Maricao 2 SSW on 9/4.

Strong El Niño conditions are currently observed across the Equatorial Pacific and is currently the 3rd largest, behind 1997 and 1987. It is expected to peak during late fall / early winter and gradually weaken through the Spring. Under these conditions, seasonal forecast continues to indicate rainfall below normal during October-November and December. Based on the U.S. Drought Outlook from the Climate Prediction Center, drought conditions should intensify or persist through this period. The Caribbean Climate Outlook Forum also indicates rainfall below normal with a 40% chance.





RAINFALL

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Islandwide climate record period: **1940 to 2015**
San Juan Metro Area climate record period: **1898 to 2015** (*Primary climatological site*)
Cyril E. King Airport/St Thomas climate record period: **1953 to 2015** (*Primary climatological site*)
Henry E. Rohlsen Airport/St Croix climate record period: **1951 to 2015** (*Primary climatological site*)
Following WMO criteria: Less than 10% of missing values



Click on image to enlarge

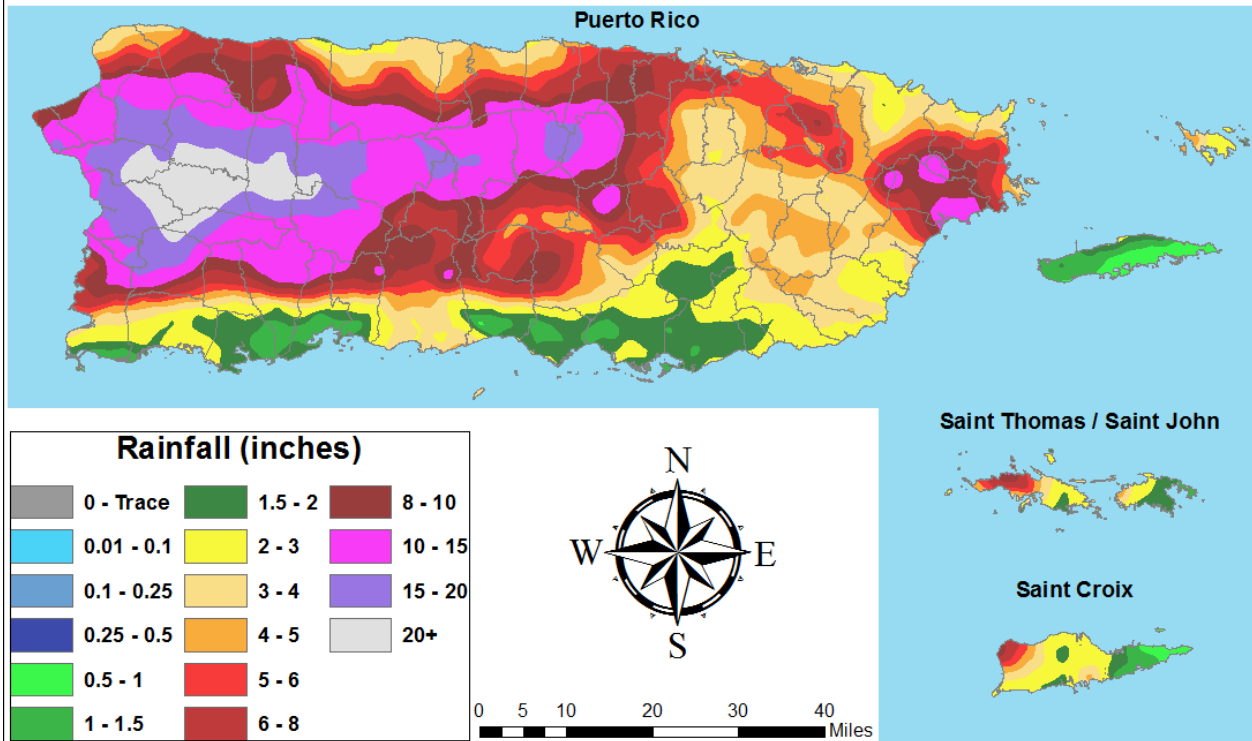


2015 September Estimated Rainfall

National Weather Service WFO San Juan

Data Source: AHPs

Data is Preliminary



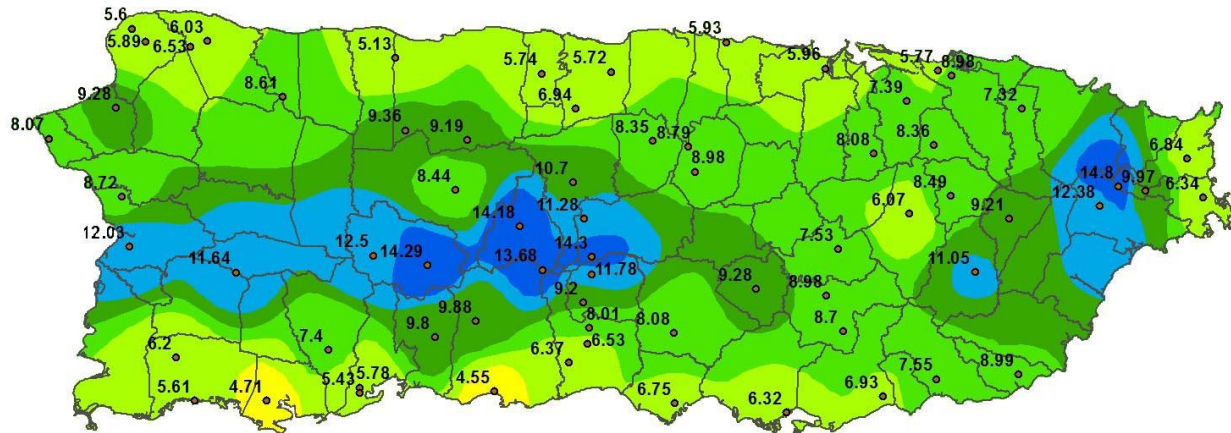
http://www.srh.noaa.gov/sju/?n=pr_usvi_normals



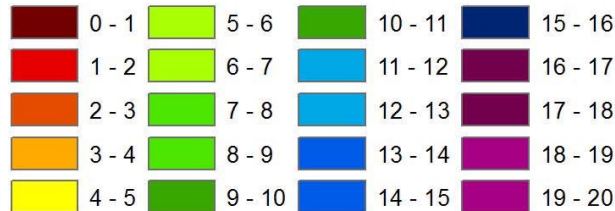
September Normal Rainfall 1981 - 2010



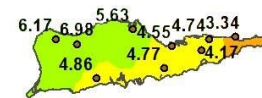
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Monthly Rainfall (Inches)



ST. THOMAS / ST. JOHN



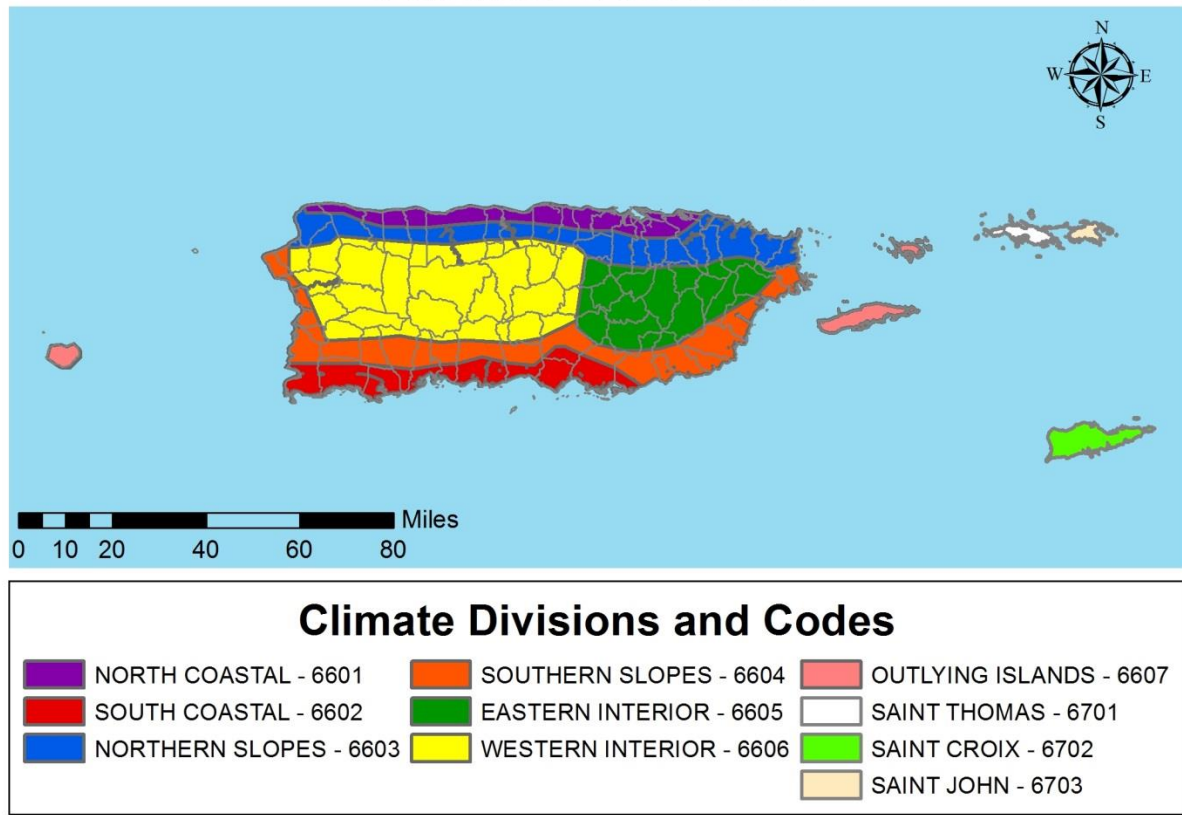
ST. CROIX





2015 Average Rainfall Accumulation per Climate Zones

Puerto Rico and U.S. Virgin Islands Climate Divisions



2015 Average Rainfall Accumulation per Climate Zones

North Coastal	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
OBSERVED	3.98	3.81	2.73	1.82	4.17	2.50	1.82	5.31	6.84	---	---	---
NORMAL	4.06	2.96	2.87	5.16	7.24	4.71	5.67	5.86	7.32	---	---	---
%PON PER MONTH	98	129	95	35	58	53	32	91	93	---	---	---
ACCUMULATED	3.98	7.79	10.52	12.34	16.51	19.01	20.83	26.14	32.98	---	---	---
NORMAL												
ACCUMULATION	4.06	7.02	9.89	15.05	22.29	27.00	32.67	38.53	45.85	---	---	---
% PON ACCUMULATED	98	111	106	82	74	70	64	68	72	---	---	---

South Coastal	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
OBSERVED	1.92	1.85	1.79	1.18	2.45	0.54	1.39	3.30	1.81	---	---	---
NORMAL	1.62	1.45	1.78	2.76	4.39	2.66	2.97	4.13	5.84	---	---	---
%PON PER MONTH	119	128	101	43	56	20	47	80	31	---	---	---
ACCUMULATED	1.92	3.77	5.56	6.74	9.19	9.73	11.12	14.42	16.23	---	---	---
NORMAL												
ACCUMULATION	1.62	3.07	4.85	7.61	12.00	14.66	17.63	21.76	27.60	---	---	---
% PON ACCUMULATED	119	123	115	89	77	66	63	66	59	---	---	---

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2015 Average Rainfall Accumulation per Climate Zones

Northern Slopes	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
OBSERVED	4.32	3.80	1.98	2.83	1.98	2.02	2.98	6.63	4.17	---	---	---
NORMAL	4.20	3.03	3.23	5.26	7.47	4.96	5.49	6.04	6.64	---	---	---
%PON PER MONTH	103	125	61	54	27	41	54	110	63	---	---	---
ACCUMULATED	4.32	8.12	10.10	12.93	14.91	16.93	19.91	26.54	30.71	---	---	---
NORMAL	4.20	7.23	10.46	15.72	23.19	28.15	33.64	39.68	46.32	---	---	---
ACCUMULATION	4.20	7.23	10.46	15.72	23.19	28.15	33.64	39.68	46.32	---	---	---
% PON ACCUMULATED	103	112	97	82	64	60	59	67	66	---	---	---

Southern Slopes	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
OBSERVED	2.39	2.84	2.00	1.47	2.68	0.99	1.79	3.48	3.92	---	---	---
NORMAL	2.00	1.86	2.28	3.91	5.90	3.54	3.83	5.54	8.29	---	---	---
%PON PER MONTH	120	153	88	38	45	28	47	63	47	---	---	---
ACCUMULATED	2.39	5.23	7.23	8.70	11.38	12.37	14.16	17.64	21.56	---	---	---
NORMAL	2.00	3.86	6.14	10.05	15.95	19.49	23.32	28.86	37.15	---	---	---
ACCUMULATION	2.00	3.86	6.14	10.05	15.95	19.49	23.32	28.86	37.15	---	---	---
% PON ACCUMULATED	120	135	118	87	71	63	61	61	58	---	---	---

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2015 Average Rainfall Accumulation per Climate Zones

Eastern Interior	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
OBSERVED	4.71	5.83	2.70	1.89	3.11	2.30	2.73	6.77	5.27	---	---	---
NORMAL	4.69	3.92	3.90	5.26	8.15	6.39	7.13	7.47	9.87	---	---	---
%PON PER MONTH	100	149	69	36	38	36	38	91	53	---	---	---
ACCUMULATED	4.71	10.54	13.24	15.13	18.24	20.54	23.27	30.04	35.31	---	---	---
NORMAL												
ACCUMULATION	4.69	8.61	12.51	17.77	25.92	32.31	39.44	46.91	56.78	---	---	---
% PON ACCUMULATED	100	122	106	85	70	64	59	64	62	---	---	---

Western Interior	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
OBSERVED	3.75	5.06	3.79	6.65	7.25	4.21	2.76	8.25	9.18	---	---	---
NORMAL	3.90	2.75	3.57	6.77	10.09	5.83	5.70	8.29	10.77	---	---	---
%PON PER MONTH	96	184	106	98	72	72	48	99	85	---	---	---
ACCUMULATED	3.75	8.81	12.60	19.25	26.50	30.71	33.47	41.72	50.90	---	---	---
NORMAL												
ACCUMULATION	3.90	6.65	10.22	16.99	27.08	32.91	38.61	46.90	57.67	---	---	---
% PON ACCUMULATED	96	132	123	113	98	93	87	89	88	---	---	---

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2015 Average Rainfall Accumulation per Climate Zones

Mainland PR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
OBSERVED	3.57	4.15	2.71	3.33	4.15	2.39	2.35	6.12	5.34	---	---	---
NORMAL	3.41	2.66	2.94	4.85	7.21	4.68	5.13	6.22	8.12	---	---	---
%PON PER MONTH	105	156	92	69	58	51	46	98	66	---	---	---
ACCUMULATED	3.57	7.72	10.43	13.76	17.91	20.30	22.65	28.77	34.11	---	---	---
NORMAL												
ACCUMULATION	3.41	6.07	9.01	13.86	21.07	25.75	30.88	37.10	45.22	---	---	---
% PON ACCUMULATED	105	127	116	99	85	79	73	78	75	---	---	---

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2015 Average Rainfall Accumulation per Climate Zones

Saint Thomas/Saint John	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
OBSERVED	1.46	3.92	1.26	0.30	2.32	1.97	0.26	2.94	0.57	---	---	---
NORMAL	2.72	1.71	1.47	2.92	3.90	2.54	3.33	3.78	5.34	---	---	---
%PON PER MONTH	54	229	86	10	59	78	8	78	11	---	---	---
ACCUMULATED	1.46	5.38	6.64	6.94	9.26	11.23	11.49	14.43	15.00	---	---	---
NORMAL												
ACCUMULATION	2.72	4.43	5.90	8.82	12.72	15.26	18.59	22.37	27.71	---	---	---
% PON ACCUMULATED	54	121	113	79	73	74	62	65	54	---	---	---

Saint Croix	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
OBSERVED	2.17	1.66	0.96	1.93	0.89	1.52	0.70	2.79	2.76	---	---	---
NORMAL	2.00	1.61	1.53	2.47	3.88	2.60	3.24	3.22	4.97	---	---	---
%PON PER MONTH	109	103	63	78	23	58	22	87	56	---	---	---
ACCUMULATED	2.17	3.83	4.79	6.72	7.61	9.13	9.83	12.62	15.38	---	---	---
NORMAL												
ACCUMULATION	2.00	3.61	5.14	7.61	11.49	14.09	17.33	20.55	25.52	---	---	---
% PON ACCUMULATED	109	106	93	88	66	65	57	61	60	---	---	---

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September 2015 in Perspective

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Top 5 **Wettest**

Top 5 **Driest**

Islandwide

Year	Inches
Sep-08	18.94
Sep-98	17.79
Sep-60	15.97
Sep-75	15.97
Sep-96	13.76

Year	Inches
Sep-86	3.47
Sep-71	3.96
Sep-12	3.97
Sep-67	4.46
Sep-83	4.50

Mean Rainfall:
8.12 inches

September 2015
accumulation:
5.34 inches.

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Islandwide climate record period: 1940 to 2015



September 2015 in Perspective

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Top 5 **Wettest**

Top 5 **Driest**

San Juan Metro Area

Year	Inches
1996	15.15
1989	14.83
1928	13.68
1899	13.66
1910	11.64

Year	Inches
1940	1.49
1987	1.73
2006	1.78
1961	1.93
1986	1.98

**Mean Rainfall:
5.77 inches**

**September 2015
accumulation:
4.30 inches.**

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Top 5 **Wettest**

Year	Inches
1953	14.94
2004	13.89
2008	12.86
1979	11.43
1960	11.03

Top 5 **Driest**

Year	Inches
2012	0.92
1986	1.08
1987	1.42
1983	1.62
2015	1.71

Cyrl E. King Airport St Thomas

Mean Rainfall:
5.58 inches

September 2015
ended as the 5th
driest
September on
record.

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September 2015 in Perspective

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Top 5 **Wettest**

Henry E. Rohlsen Airport St Croix

Year	Inches
1996	19.15
1953	9.80
1954	9.03
1952	9.00
2004	8.67

Top 5 **Driest**

Year	Inches
1981	1.07
2015	1.27
2001	1.64
1986	1.96
2011	2.08

Mean Rainfall:
4.86 inches

September 2015
ended as the 2nd
driest
September on
record.

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September 2015 in Perspective

Wettest Days

Station	Inches	Date
MARICAO FISH HATCHERY	4.32	9/21/2015
ARECIBO OBSY	3.51	9/24/2015
TOA BAJA LEVITOWN	3.43	9/8/2015
MOROVIS 1 N	3.12	9/20/2015
PALMAREJO VEGA BAJA	3.12	9/23/2015



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September 2015 Highlights for Primary Climatological Data Sites

Wettest Days

San Juan Metro Area

Inches	Date
1.65	9/1/2015
1.06	9/22/2015
0.42	9/20/2015
0.25	9/13/2015
0.20	9/10/2015

Cyril E. King AP/St Thomas

Inches	Date
0.50	9/4/2015
0.24	9/12/2015
0.22	9/18/2015
0.21	9/11/2015
0.20	9/15/2015

Henry E. Rohlsen AP/St. Croix

Inches	Date
0.48	9/12/2015
0.31	9/17/2015
0.22	9/16/2015
0.10	9/30/2015
0.08	9/21/2015

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TEMPERATURE

Islandwide climate record period: 1940 to 2015

San Juan Metro Area climate record period: 1898 to 2015 (Primary climatological site)

Cyril E. King Airport/St Thomas climate record period: 1953 to 2015 (Primary climatological site)

Henry E. Rohlsen Airport/St Croix climate record period: 1951 to 2015 (Primary climatological site)

Following WMO criteria: Less than 10% of missing values



September 2015 in Perspective:

Mean Avg. Temperature

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Top 5 Warmest

Top 5 Coolest

San Juan Metro Area

Year	°F
2012	84.9
1995	84.9
1982	84.5
1980	84.5
2013	84.4

Year	°F
1910	79.3
1921	79.6
1904	79.6
1922	79.7
1917	79.7

Mean Temperature:
83.5 °F

September 2015
mean temperature
84.3 °F

Sep 2015 ended as
the 6th warmest Sep
on record.



September 2015 in Perspective: Mean Avg. Temperature

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Top 5 Warmest

Cyril E. King Airport St Thomas

Year	°F
1993	86.3
1992	85.7
1994	85.6
1987	85.1
2015	85.0

Top 5 Coolest

Year	°F
1979	80.3
1956	81.3
2008	81.6
1955	82.0
1960	82.1

Mean Temperature:
84.0 °F

Sep 2015 ended as
the 5th warmest Sep
on record.



September 2015 in Perspective:

Mean Avg. Temperature

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Top 5 Warmest

Henry E. Rohlsen Airport St Croix

Year	°F
1993	85.3
1972	84.9
1997	84.8
1983	84.3
1987	84.1

Top 5 Coolest

Year	°F
1954	80.0
1978	80.3
1955	80.7
1952	81.0
2008	81.1

Mean Temperature:
83.1 °F

September 2015
mean temperature
83.2 °F



September 2015 Highlights

Highest **Maximum** Temps

Station	Value (°F)	Date
AGUIRRE	98	9/12/2015
LAJAS SUBSTATION	96	9/11/2015
JUNCOS 1 SE	96	9/12/2015
TOA BAJA LEVITOWN	95	9/26/2015
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Lowest **Minimum** Temps

Station	Value (°F)	Date
MARICAO 2 SSW	63	9/4/2015
AIBONITO	63	9/11/2015
AGUIRRE	65	9/16/2015
LAJAS SUBSTATION	68	9/15/2015
PALMAREJO VEGA BAJA	68	9/4/2015

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2015 Highlights for Primary Climatological Data Sites

FALL

	SEP	OCT	Season (SON)	YTD
JSJ	6 th warmest (84.3F)	Warmest and Driest	Warmest (85.8F) and driest (4.33")	6 th driest (27.40") and 5 th warmest (82.0F)
IST	5 th driest (1.71") and 5 th warmest (85.0F)	4 th warmest	Warmest (84.9F) and driest (7.09")	7 th wettest (34.17") and 4 th warmest (82.0F) . 2015 currently ranks as the year with the 2 nd highest number of 80 degree nights.
ISX	2 nd driest (1.27")	Warmest and 6 th driest	Warmest (84.5F) and driest (3.18")	Driest (12.87") and 2 nd warmest (81.7F)

San Juan Metro Area climate record period: 1898 to 2015 (Primary climatological site)

Cyril E. King Airport/St Thomas climate record period: 1953 to 2015 (Primary climatological site)

Henry E. Rohlsen Airport/St Croix climate record period: 1951 to 2015 (Primary climatological site)

Following WMO criteria: Less than 10% of missing values



2015 Highlights for Primary Climatological Data Sites

Summer

	Jun	Jul	Aug	Season
San Juan	17 th driest and 8 th warmest	4 th driest and 9 th warmest	---	11 th driest and 10 th warmest
Saint Thomas	13 th driest and 13 th warmest	2 nd driest, 8 th driest month, 5 th warmest, the month of July with the most 80 degree nights, and 3 rd longest streak -Tmin above 80 (ending 08/01).	4 th warmest and 4 th driest. the 2 nd month of Aug with the most 80 degree nights, the 2 nd month on record with the most 80 degree nights	Driest and 3 rd warmest
Saint Croix	7 th driest and 8 th warmest	2 nd driest and 10 th warmest	9 th warmest	4 th driest and 6 th warmest



2015 Highlights for Primary Climatological Data Sites

Spring

	Mar	Apr	May	Season
San Juan	---	4 th warmest	15 th driest and 5 th warmest	5 th driest and 6 th warmest
Saint Thomas	---	8 th driest	9 th wettest and 10 th warmest	14 th warmest
Saint Croix	10 th driest	7 th driest and 7 th warmest	9 th warmest and 12 th driest	2 nd driest and 7 th warmest

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2015 Highlights for Primary Climatological Data Sites

Winter

	Dec (2014)	Jan	Feb	Season
San Juan	---	3 rd warmest	6 th warmest	5 th warmest
Saint Thomas	---	---	wettest February and 6 th wettest month	wettest
Saint Croix	8 th wettest	14 th driest	6 th warmest	---

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LOOKING AHEAD TOWARD OCTOBER



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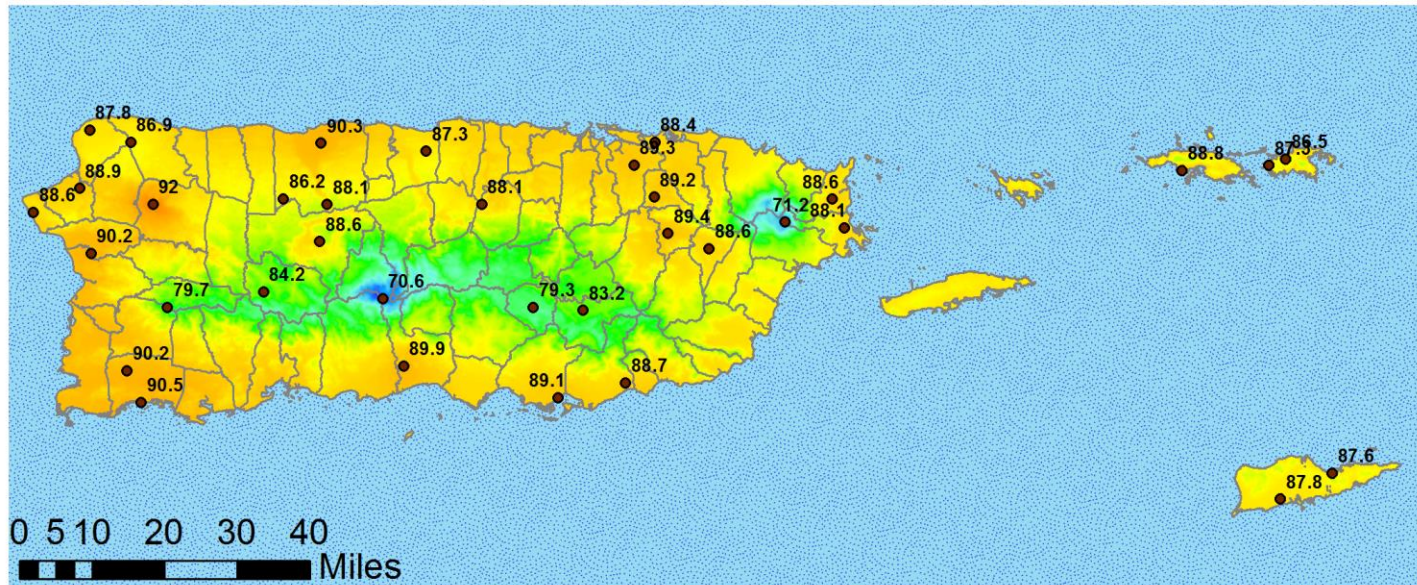
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October Normal Maximum Temperatures 1981-2010

National Weather Service WFO San Juan



Temperature Range °F



High : 100

80

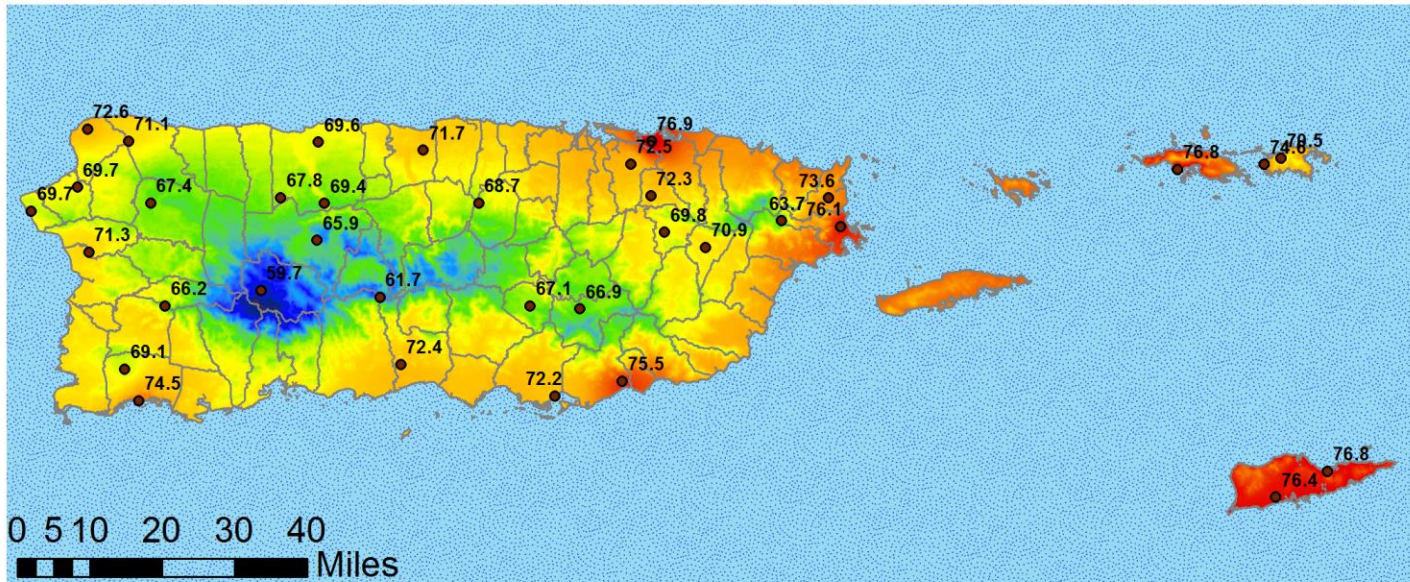
Low : 60





October Normal Minimum Temperatures 1981-2010

National Weather Service WFO San Juan



Temperature Range °F



High : 80

65

Low : 50

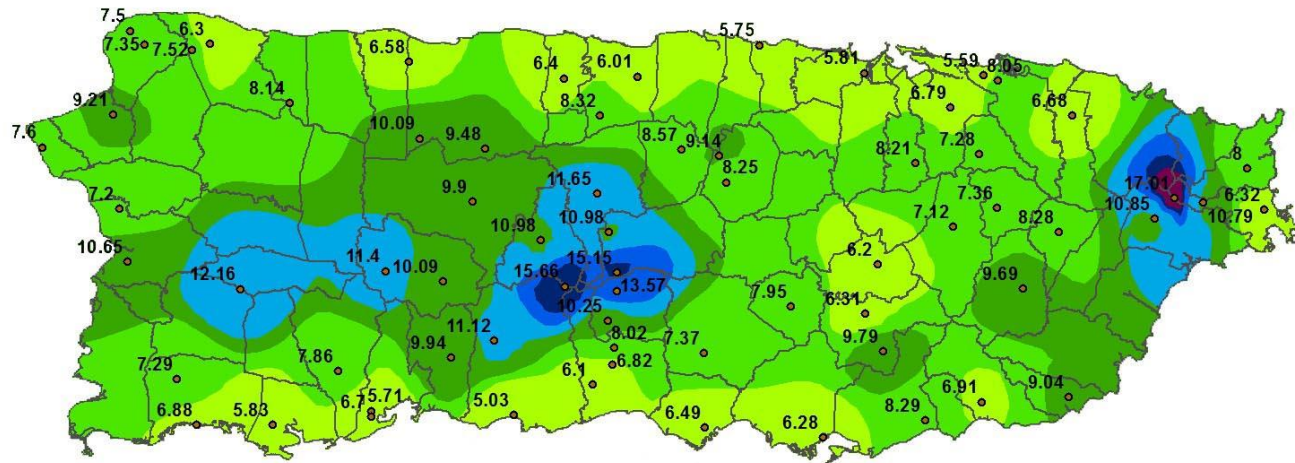




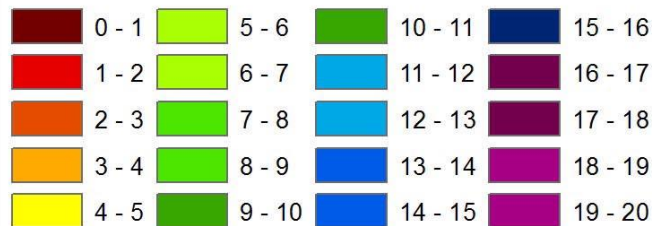
October Normal Rainfall 1981 - 2010



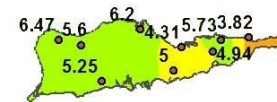
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Monthly Rainfall (Inches)



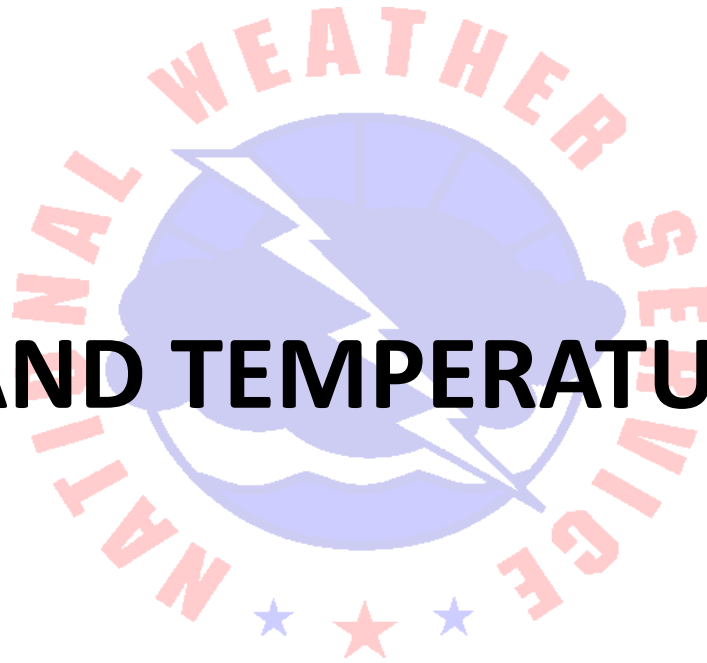
ST. THOMAS / ST. JOHN



ST. CROIX



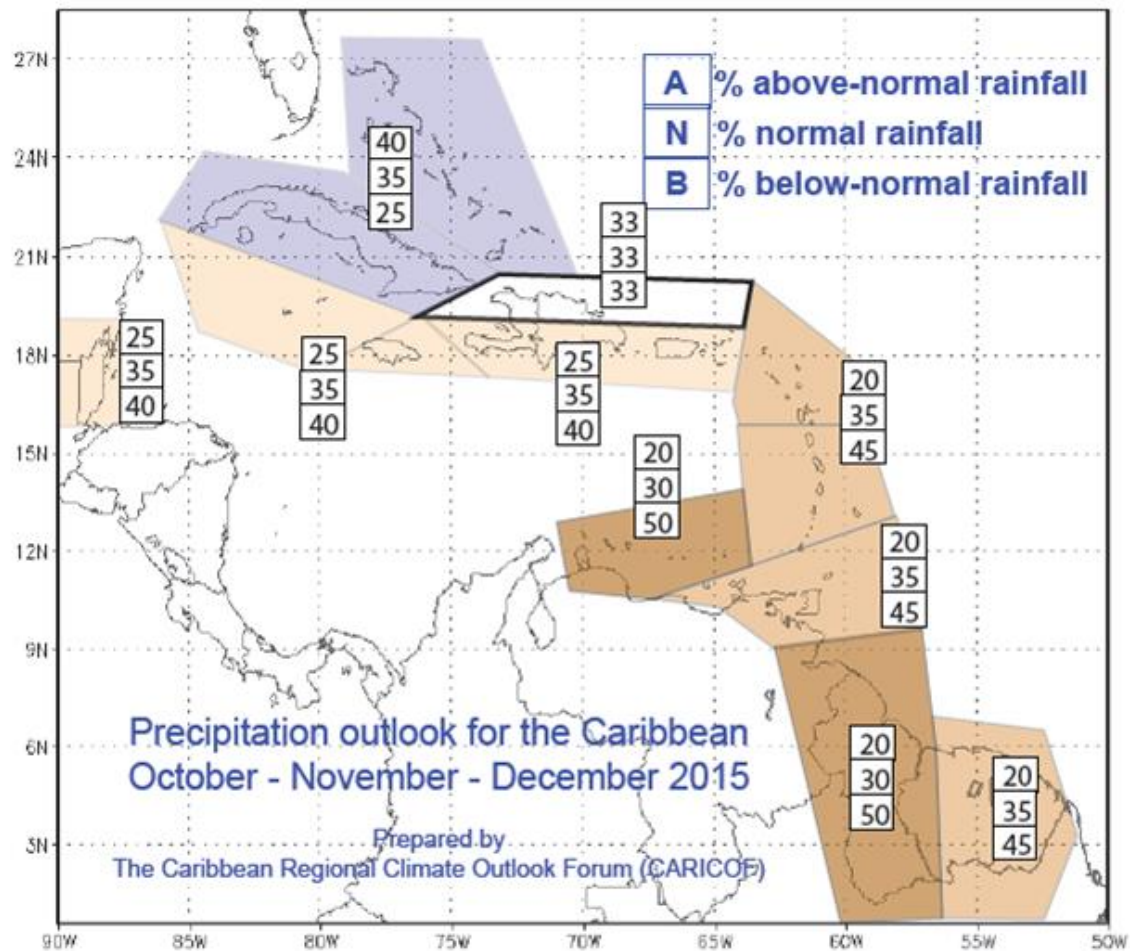
RAINFALL AND TEMPERATURE OUTLOOK



WFO

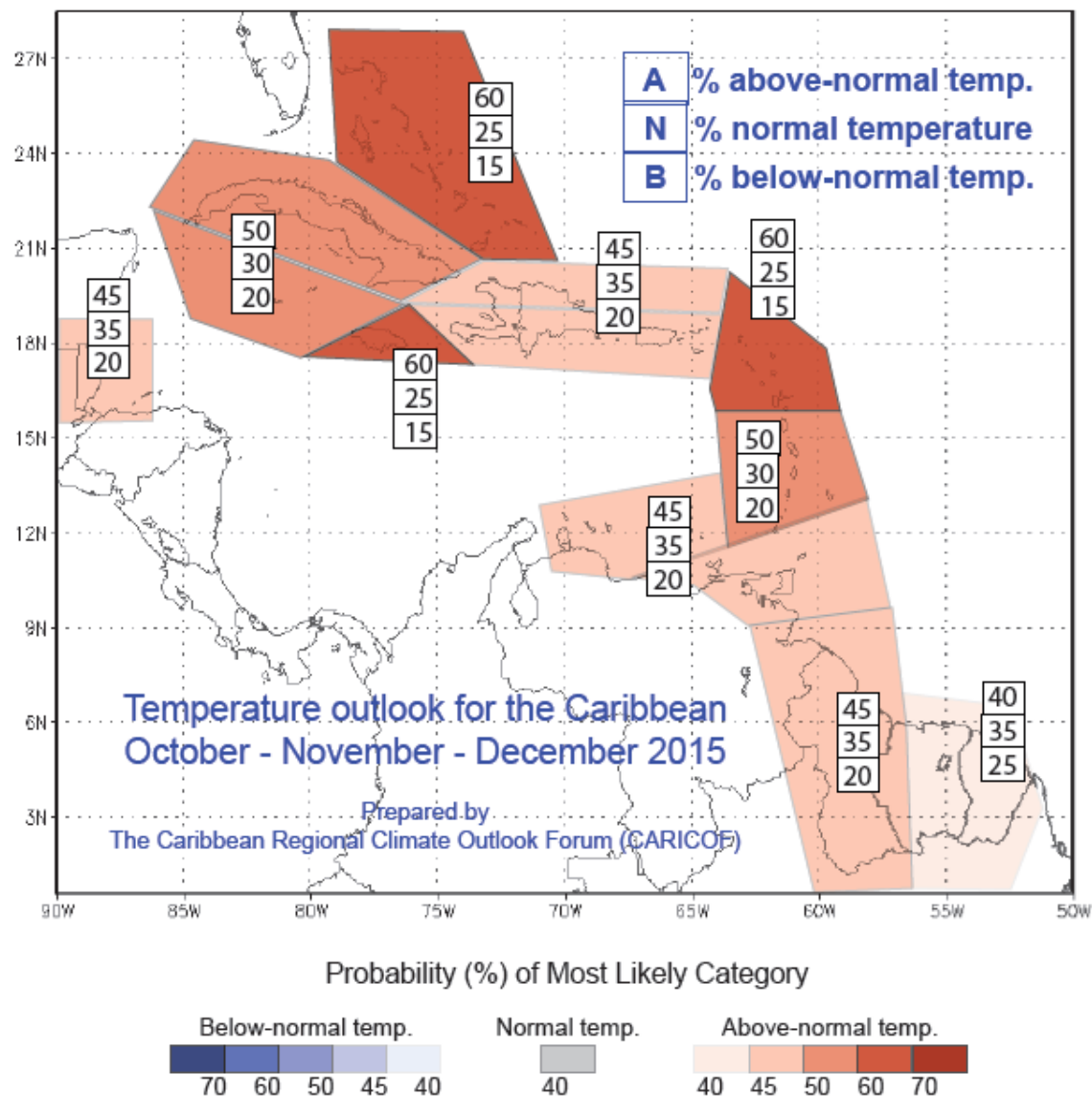
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<http://www.cimh.edu.bb/?p=precipoutlook>





<http://www.cimh.edu.bb/?p=precipoutlook>

